UTCS ComputerNews

university of toronto
computing services

B84-0304.(06)
Archives
[illegible]
UTL
U32.1

TABLE OF CONTENTS

Features

Let's Talk About It: The Joys of 'Vanilla' 1
New Subscription Policy 2
Places to Go and People to Meet 3
A Farewell to Cards: Instructional Computing on St. George Campus 4
Turing - A New General Purpose Language under UNIX 5
CLASS=W (The HSJS) To Be Discontinued 6
WYLBUR — An Alternative to Keypunches 7

Departments

Accounting Services 9
Protect Your Codes 10
Billing for Special Services 11
Documentation Changes 12
Scarborough College 12
MVS System Product 1.3.1 13
MVS Dataset Monitor 14
TSO as affected by MVS SP 1.3.1 14
3380 Disk Conversion 15
SAS/OR 15
SAS Technical Reports 16
SPSS-X 16
Summer Class C Rate Expires 17
Hours of Service 17
New Location of Microcomputer Facility 17
Mainframe File Transfer Facility 18
Scribe Formatting 18
Changes in 9700 Rates 19
Farewell to the CRF Lab 19
Fall Short Courses 20

General

Change Committee 23
Personnel Changes 24
Recent Acquisitions in the Computer Library 25
UTCS Terminal and Advising Sites 27
UTCS Systems 28
Consulting and Enquiries 29
UTCS Directory 29
Committees on Computing 29

ISSN 0315-4661 September 1983 No. 209

Publisher

University of Toronto
Computing Services
Toronto, Ontario
Canada M5S 1A1

Editor: Harriet Cooper

Publications Assistant: E. Weitmann

Publication Date: September 1, 1983.

Subscriptions

Subscription changes should be entered on the tear-out form at the back of this issue, and mailed to *COMPUTERNEWS,* Engineering Annex, Room 206 (or phone 416-978-4990).

COMPUTERNEWS is published 8 times yearly by University of Toronto Computing Services. Enquiries or contributions should be directed to:

The Editor
COMPUTERNEWS
11 King's College Road, Room 207
University of Toronto
Toronto, Ontario
Canada M5S 1A1

Permission is granted to reprint articles from *COMPUTERNEWS* for noncommercial purposes provided the author, publication and issue are acknowledged.

Let's Talk About It: The Joys of 'Vanilla'

Gentle reader, this somewhat 'cutsie' title actually refers to a pretty serious subject with major ramifications on the cost of running an operation like UTCS. In the jargon of systems, 'Vanilla' refers to application or system software in its plain, unadorned, unmodified form, exactly as it comes from the vendor. It also implies an operation that does not have a great deal of variety in terms of numbers of packages offered. To the present time at least, UTCS is far from 'Vanilla' in either sense of the word. We support many packages, most with anywhere from minor to very major modifications; practically all of our operating systems and utilities have been modified fairly substantially over the years to reflect the University's particular way of doing things. These modifications have been made for a number of reasons. In the case of applications, many modifications have been made to make them easier and more user friendly and to enhance their functionality. Operating system software, particularly facilities and utilities which are available on the machines, have usually been modified in order to take into account our somewhat peculiar mode of operation, in order to accommodate our accounting system and the necessity of charging for our services, and to simply offer function which would not be available in any other way. An example of the last point is the High Speed Job Stream.

The High Speed Job Stream situation is worth exploring in some detail since it illustrates most of the points about the advantages of 'Vanilla' systems. High Speed Job Stream (HSJS) was originally implemented a number of years ago to accommodate the rapid submission and turn-around of instructional jobs which used cards. Students would put their card decks in a reader and their jobs would come out on the printer in the same order that the cards had gone in. The system was optimized for very fast turn-around, was designed to be quite efficient, and had fairly stringent resource restrictions placed on it. It was and is a very non-'Vanilla' system which could have not been constructed out of standard operating system software and utilities. The processors that one can utilize under HSJS are, with the exception of WATFIV, not supported at all by UTCS. Thus High Speed Job Stream not only represents non-'Vanilla' of some sort, it also has slowly decaying bits of 'Tutti-Frutti' mixed in. To be perfectly honest, we have really ignored HSJS except at points where we really had no choice but to address it. We are now at the point, however, where we must look at it fairly carefully for a number of reasons. First, it is really no longer needed for instruction. With the removal of keypunches and cards as a means for inputting programs, the highly optimized first-in/first-out mode of operation permitted by HSJS is no longer necessary. Second, getting the highly non-'Vanilla' High Speed Job Stream to run under our latest release of IBM's operating system and to utilize the new 3380 disk drives that we are going to install this fall will present a major problem. It appears that a great amount of work will be necessary to make High Speed Job Stream run under this new environment. Even more so, getting the individual processors that run under HSJS to operate, particularly with the 3380s, may be nearly impossible and may require that we change the support level on these processors which we explicitly decided not to support.

What are the consequences of High Speed Job Stream being non-'Vanilla'? First, when we convert to new processors we may find that it takes an inordinate amount of effort to do so, and in many cases may be nearly impossible. Second, by offering non-'Vanilla' systems, users are able to write applications which intimately incorporate modifications peculiar to our particular operating environment and modifications which, at some point in time, may be unsupportable. But what we are really talking about ultimately, is an environment of 'Vanilla' applications running on 'Vanilla'

continued...

Let's Talk About It continued

systems. This does not mean that one is able to do any less with the computer in solving a particular problem. It does mean that the solution will not incorporate particular idiosyncrasies which we have built into our systems.

As a general rule, and practically as a matter of policy, we will be attempting to simplify our operating environment whenever and wherever possible. What this really means is that where we in the past have made modifications to a standard vendor product, we will try to eliminate them. In some cases we may be able to replace them with simple applications which will use standard tools. Once we are operating in this fashion we can give better support to the straightforward unmodified applications or tools. We will not have to devote as much time and effort to understanding, documenting, training, and advising on modifications, and particularly, the effort of converting the modifications when installing new releases of the standard product or when changing technologies will be eliminated.

Coming back to HSJS, it will be eliminated in its present form, at the beginning of the Fall term. For instructional use, access to as many of the processors as will run under General Purpose Job Stream will be through either BICS or LIBRA. We will replace the High Speed Job Stream with a service constructed from standard components. By doing this, we will be able to devote more of our scarce systems programming resource to the conversion to 3380s that will be taking place in the fall. As a general rule you can expect that we will be eliminating as many modifications on all our products and services as possible. We will attempt to give you adequate warning and to discuss these changes and give you tools to cope with the changes. However, with the pressure on UTCS to continue to give the same level of service with less and less resources, to move toward 'Vanilla' is a significant step in achieving this goal.

Warren Jackson

New Subscription Policy

At present, UTCS does not charge a subscription fee for *COMPUTERNEWS.* We have traditionally provided copies of the newsletter to all interested individuals and institutions. However, because of rising mailing and printing costs, we are currently reviewing our subscription policy in order to find ways in which we can bring our subscription list down to a more manageable size. By keeping the number of issues we send out each time at a reasonable level, we can continue to provide the publication at no cost to our subscribers.

As part of this campaign, we would ask our subscribers to review the material contained in this issue and in the past several issues. If the material is no longer relevant to your needs, then we would ask you to cancel your subscription using the UTCS Newsletter Subscription Form found in the back of every issue.

Further information regarding our subscription policy will be detailed in the next issue of *COMPUTERNEWS.*

Harriet Cooper

Places to Go and People to Meet

The number 978-HELP (978-4357) is probably one of the most popular telephone numbers on campus. Why? Because weekdays from 10:00 a.m. to 6:00 p.m. it is answered by staff of the UTCS Central Advising Office (CAO) who are on hand to help you resolve computing problems. Members of the group are qualified to answer questions about access, command languages, service languages, applications packages, and data storage on the IBM 3033/N12, DEC-10, and PDP 11/70 computers. Most questions are answered by upper level part-time students. However, should further assistance be required, consultative meetings are arranged with the full-time members of the group, Alex Nishri (Supervisor), Terry Jones, and Veronika Moravan. A satellite drop-in office is operated year round in Sidney Smith, Room 2100 (978-2043) from 10:00 a.m. to 6:00 p.m. During the academic year, there is also a drop-in service in the Engineering Annex, Room 106 from 1:00 p.m. to 5:00 p.m.

Information from last year indicates that the CAO was able to successfully resolve over 95% of the problems it received. Occasionally, however, it may be necessary for CAO members to establish consultative sessions with other specialists within UTCS. Usually these specialists are members of either the Text or Applications Support Groups. Included in these groups are individuals who are qualified to provide assistance in text preparation, microcomputer support, natural language analysis, statistical and numerical analysis, as well as the use of APL, WYLBUR, and graphics packages. The activities of these support people are partially directed by product area user groups. Currently there are user groups in APL, Natural Languages, Microcomputers, and Statistical Computing. The groups meet with product specialists and senior UTCS staff for the purposes of information exchange and feedback to UTCS to assist in the establishment of the needs and priorities of the groups. In addition to their consultative role, members of the Text and Applications Groups provide user support by installing packages, identifying and reporting problems, writing documentation, and conducting short courses.

Should you wish to obtain documentation or to register for courses, you will be meeting our Education/Library Group located in Rooms 206 and 207 of the Engineering Annex. Harriet Cooper (Supervisor), Irene Rosiecki, Liz Weitmann, and Dale Wright publish and distribute UTCS documentation, such as the *COMPUTERNEWS* you are now reading. They also maintain a library of vendor supplied manuals documenting our various offerings. UTCS and vendor documentation may both be purchased from the Group at the Information Office in Room 206 (978-4990). The Information Office is also the place to go to or call if you have any general questions. Dale will be happy to answer them or direct you to someone on staff who can help you. To register for courses, call Irene at 978-4565.

Individuals who are members of organizations associated with the University such as teaching hospitals or research institutes are asked to contact either of their representatives, William Fehlner (978-6509) or Ihor Prociuk (978-6875). The full use of University of Toronto services is available to such organizations.

The forenamed UTCS sub-groups and individuals constitute the User Interface Group. As implied by the name of the group, it is responsible for a substantial part of the interaction between UTCS and its users. However, you are likely to be in regular contact with two other groups as well, Operations and Accounting Services.

Though most members of Operations are out of public view, the Facilities Management sub-group is visible in several locations. These are the Engineering Annex,

continued...

Places to Go continued

Arts and Science, Robarts, Erindale, and Scarborough sites. Staff members assure the maintenance and operation of machinery in these locations and assist users with difficulties they may encounter with equipment. In addition, at the remote Scarborough and Erindale sites, Facilities Management staff also provide advice on software problems. Occasionally you may require system status information or need to report system problems outside of the normal hours of service for the Central Advising Office. At such times you should call either the DEC-10 console (978-4318) or the IBM 3033/N12 console (978-7393).

Accounting Services is open weekdays from 9:00 a.m. to 5:00 p.m. Marg Doherty (Supervisor), Sylvia May, or Agatha Stevens will assist you in establishing or closing accounts, as well as making transactions to or answering questions about current accounts. They are located in McLennan Physical Laboratories, Room 337 (978-8703 for University of Toronto accounts or 978-7148 for other accounts).

We hope that the difficulties you encounter during the new academic year are minimal. But when problems arise, we have people to help.

Don Gibson

A Farewell to Cards: Instructional Computing on St. George Campus

Welcome to the first term of card-free instructional computing! When I began working for UTCS slightly over a decade ago, one of my first system programming tasks was the Conversational Remote Job Entry system. CRJE was an early IBM attempt to replace card punches and readers with interactive terminals. In the intervening years, UTCS has installed a number of interactive terminal systems, and each has had some success in attracting new users to the computer as well as in directing people's thoughts and attentions away from punched cards as 'the' way to access and use the computer. The systems have typical cryptic 'computerese' names, such as APL, CPS, ATS, CRJE, IMS, TOPS-10, TSO, WYLBUR, VIVA, LIBRA, BICS - have I missed any?

Some of these systems have come and gone, while others are still going strong. But through the years people have held onto their cards. A deck of punched cards has a tangible existence, something a file on disk 'somewhere in the computer' has not. For some people, that's a kind of security blanket. Cards have appeared to be less expensive, because of many factors including the provision of free card punches (although terminals were charged for) and even free cards until recently. The fact that the real costs of maintaining these mechanical monsters has continued to grow, coupled with some funding from the University, allows us finally to complete the dream and lay to rest these dinosaurs, bidding a final Farewell to Cards in instructional computing.

As of September 1, 1983, all the keypunches used in instructional computing will be removed from service. (A few will remain in service for a while for research users.) Replacing the card punches for all teaching use will be the Basic Instructional Computing Service (BICS). BICS, which is for teaching use only, allows for preparation of programs, local compilation and execution of programs in the Turing language, and remote access to all the processors on the UTCS IBM mainframe. Note: the High Speed Job Stream is also being removed in September. (For more information on the Turing language and alternatives to HSJS, see the articles in this issue of *COMPUTERNEWS.)*

BICS is a UNIX system, modified to limit its use to preparation and submission of as-

continued...

Instructional Computing continued

signments in computing education. The UNIX implementation is UTS UNIX modified by Amdahl to run on an IBM 3033 computer with VM/370. Actually there are several virtual UTS systems on one real IBM mainframe (3033/U16). The multiple operating systems are kept up by the VM/370 system. VM spooling provides the communications between each UTS machine and the other IBM environments, including the MVS machine which is the centre of the network of remote printers at each BICS site.

BICS will be available from six sites around St. George Campus. The John P. Robarts Research Library, Sidney Smith Hall, and Victoria University, which were BICS sites last year, will be joined by the Engineering Annex, the University of Trinity College, and the University of St. Michael's College. Although space in the colleges is provided by the colleges primarily for the benefit of their own members, students may use whichever site they find most convenient, regardless of college affiliation. Activities are underway as I write this article to prepare these sites for student use in September.

Information on BICS usage will be found in the *BICS User Manual,* currently being revised by the Department of Computer Science. Professors in the Department of Computer Science will be aware of the BICS Steering Committee, chaired by Professor R.C. Holt. Professors in any other department or faculty needing access to BICS for their classes should contact UTCS's BICS Coordinator, Andy Mountain, at 978-4310.

Ian Darwin

Turing - A New General Purpose Language under UNIX

The BICS service will be the first large scale use of the innovative new language Turing. Turing was developed here at the University of Toronto by the Computer Systems Research Group, and used for teaching some classes in the summer of 1983. For the fall term, Turing will be offered on a large scale for undergraduate teaching in Computer Science under the Basic Instructional Computing Service (BICS) on the IBM 3033/U16 and the VAX 11/750 and VAX 11/780 belonging to the Computer Disciplines Facility and the VAX 11/750 at Scarborough and Erindale. CSRG is providing the Turing compiler and UTCS is providing the BICS environment.

The following is extracted from the paper *Turing: A New General Purpose Language Under UNIX* by J.R. Cordy and R.C. Holt of the University of Toronto Computer Systems Research Group. The paper was presented at the USENIX Association Joint Conference in Toronto, July 1983.

"Turing can be thought of as a convenient, generalized, interactive version of Pascal. A Turing compiler has been developed at the University of Toronto.

"Turing is designed to support the development of reliable, efficient programs. It incorporates language features that decrease the cost of program development and that support formal program verification.

"Turing is a Pascal-like language that incorporates almost all of Pascal's constructs. It alleviates many difficulties with Pascal; for example, Turing provides convenient string handling, it provides modules, its variant records (unions) are type safe, and it has dynamic parameters and arrays."

Some of the features offered by Turing include the elimination of the need to provide useless program header information needed in languages such as C and PL/I, concise input and output, dynamic arrays, convenient string handling, case statements

continued...

Turing continued

with a default case, records for aggregating small data items into meaningful units, pointers and dynamic allocation, recursion and sets as in Pascal, and others. Turing interacts well with the UNIX system, and is being adapted by CSRG for the special needs of the BICS environment. All introductory courses in the Department of Computer Science will be taught using the Turing language.

If you would like more information on Turing, please contact Professor R.C. Holt, Chairman, Computer Systems Research Group at 978-8726. For more information on BICS, contact Ian Darwin, UTCS, 978-8853.

Ian Darwin

CLASS=W (The HSJS) To Be Discontinued

As of September 5, 1983, UTCS will no longer offer CLASS=W on the IBM 3033/N12. This means the High Speed Job Stream will be eliminated. The reasons for this change are discussed at length in the article "Let's Talk About It" elsewhere in this issue. Briefly, the reasons are:

1. Planned hardware changes later this fall involve the replacement of 3330 disks with 3380s. HSJS will not work on 3380s without extensive re-writing.
2. Most Highspeed compilers are so old their vendors have dropped support.
3. HSJS had been the primary vehicle for instructional computing, but now our supported vehicles are the BICS and LIBRA services.

There are several alternatives available to HSJS users.

1. The current General Purpose Job Stream catalogued procedure 'HSJS' will continue to function, unsupported by UTCS (i.e. as a Class C service), until 3380s are actually installed. At that time this alternative will no longer be available. WATFIV, PL/C, SP/k and UTILITY are available through the use of the following:
   ```
   // EXEC HSJS
   ```
2. Use of Class A supported language processors on GPJS (i.e., PL/I, VS/FORTRAN, etc.), are available via several UTCS catalogued procedures.
3. UTCS is currently investigating usage statistics for each of the HSJS processors. Based on these statistics, UTCS will then either drop the particular processor, or install it via GPJS catalogued procedures as, for example,
   ```
   // EXEC WATFIV
   ```
   which is currently available.
4. BICS and LIBRA are available for instructional use only and will be unaffected by the 3380 implementation. Note also that the current ORACLE terminals, offering 24 hour a day on-line advice about WATFIV and PL/C error messages, will still function at the BICS and LIBRA sites. Please call Andy Mountain at 978-4310, to arrange new BICS accounts. (For more information on instructional computing, see the article in this issue of *COMPUTERNEWS.)*

If you still have specific requirements, not related to instructional computing, about which you are uncertain, please call the Central Advising Office at 978-HELP.

Paul Roth

WYLBUR — An Alternative to Keypunches

This article, which appeared in last month's issue of COMPUTERNEWS, is being rerun for the benefit of our new users and for those users who may have been away during the summer and missed the article.

As part of our efforts to upgrade research facilities and increase interactive access to our machines, UTCS is decreasing the number of research and instructional keypunches and replacing them with terminals. By September 1, 1983, there will be only ten keypunches operated by UTCS on the St. George campus. It is very possible that this number will drop to zero within another year.

If all our present users continue to use cards, then the demand for these keypunches will be very high. Therefore, UTCS has been encouraging users to consider alternate methods of accessing our mainframes.

One particular system which could replace the keypunch and card reader is the Remote Job Entry/Output system called WYLBUR. WYLBUR is a powerful program editor and data entry system which manipulates various kinds of source programs and computer jobs. It allows for online interactive editing such as data creation, modification, and deletion. It also provides the user with the capability of remotely submitting and retrieving jobs from a terminal.

Advantages of WYLBUR

There are many advantages to using WYLBUR rather than cards. The following list details the ones that generally apply.

1. The cost of WYLBUR as compared to cards decreases as the number of cards increase or the number of runs increase.
2. Data entry, editing, and reviewing input can be done faster and more accurately because it is easier to see what you have typed.
3. Global changes are easy (impossible with a keypunch).
4. Duplicating data is done with one command.
5. You will spend less time (your time) at the terminal than at a keypunch.
6. You can work from your home or office using either your own terminal or a UTCS rental terminal that can transmit over telephone lines.
7. Source programs can be compiled and kept in a load library so you do not have to spend money recompiling your source for every run.
8. You can fetch your output to the terminal rather than printing every job so you save printing costs during program development.
9. You do not have to buy cards, carry them around with you, find a place to store them, or worry about dropping a card deck.

Cost Comparisons

By using the data given below, you can work out whether or not WYLBUR can decrease your computer costs. To calculate your costs you need the following information.

For Cards:

1. Cost of a box of 2000 cards ($12.82 at the University Bookroom including tax).
2. Cost of reading cards @ $1.40/1000 cards.
3. Cost of printing output @ $1.40/1000 lines.
4. Intangible costs such as time spent at the keypunch and physically fetching your output.

For WYLBUR:

1. Cost of online storage (see Table II below).

continued...

WYLBUR continued

2. WYLBUR session charges — average $4.50/hr and cheaper at night and on weekends.
3. Cost of printing output @ $1.40/1000 lines.
4. Intangible costs such as a lot less time spent at the terminal and not having to physically fetch output.

Note: by referring to Table I you will see that WYLBUR does not charge for reading cards (card images) from online storage.

Other costs that should be figured into your calculations include the cost of wasted cards because of keying errors, the number of runs required to get the job right, the number of times a program will be run, and the number of cards to be read each run. Note: whether the job is submitted through the card reader or through WYLBUR, all other charges, i.e. execution time, should be equal. You may find other advantages to using WYLBUR as you investigate it further.

If you decide to use WYLBUR, you can pick up a copy of the WYLBUR Abstract at the UTCS Information Office, Engineering Annex, Room 206. The Abstract will tell you how to get started with WYLBUR and where to get more documentation. You can obtain a WYLBUR account at the UTCS Accounting Office, McLennan Physical Laboratories, Room 337 or call them at 978-8703.

If you still have questions about WYLBUR, please call me at 978-6346.

Remember, most of the keypunches will be disappearing by September 1, 1983.

Steve Younker

TABLE I: WYLBUR COSTS

Records	Blocks Used (tracks)	Storage $/day	Storage $/month	Cost/Run (read)
100	4(1)	0.0135	0.0405	free
200	8(2)	0.0270	0.0810	free
500	16(4)	0.0540	1.6200	free
1000	28(7)	0.0945	2.8350	free
5000	128(31)	0.4185	12.5550	free

Storage cost in WYLBUR or CARD image format
1 card image or 1 WYLBUR record = 1 record
Charges are for multiples of 4 blocks (4 block minimum)
Card Image Format FB/80/3120
WYLBUR record format U/3156/3156

TABLE 2: CARD COSTS

# of Cards/Runs	1	5	10	25
100	0.14	0.70	1.40	3.50
200	0.28	1.40	2.80	7.00
500	0.70	3.50	7.00	17.50
1000	1.40	7.00	14.00	35.00
5000	7.00	35.00	70.00	175.00

Note: cost per run in dollars

Box of 2000 cards (tax included) - $12.82
Cost of reading 1000 cards - $ 1.40

Accounting Services

Accounting Services, located in McLennan Physical Laboratories, Room 337, handles requests for new accounts and Service Access Codes (SACs) as well as changes to existing accounts.

UTCS accounts and codes are structured on three levels: Blanket Purchase Order Account Number, Customer Account Number, and Service Access Code.

The following is a description of the basic account divisions and how they are funded and controlled.

Blanket Purchase Order Account (BPOA)

Accounts are normally funded by a user raising a Blanket Purchase Order through the Department. This Blanket Purchase Order encumbers or reserves funds required to meet the estimated cost of that user's computing at UTCS, usually for a fiscal year. The dollar amount shown on the Blanket Purchase Order is recorded by UTCS in a holding account, called a Blanket Purchase Order Account (BPOA). This amount becomes the user's credit limit or allotment and can be changed at any time by requesting an increase or decrease on a Purchase Order through the University's Purchasing Department.

Customer Account Number (CAN)

The allotment in a BPOA can be divided out or budgeted for different individuals, projects, courses, etc., at the next control level, which is the Customer Account Number (CAN). If all funds allotted to a BPOA are used for a single purpose, then only one CAN is established and the spending limit on that CAN is identical to the total amount allotted to the BPOA. However, multiple CANs can be set up under a single BPOA, with each CAN having an individual spending limit. In the second instance, the sum of the individual CANs should not exceed the total BPOA allotment.

Service Access Code (SAC)

To access the various software products and services on any of the UTCS computing systems, a Service Access Code (SAC) must be established for each machine system that the user intends to use. SACs are set up for users who are authorized owners or holders of a valid Customer Account Number. Any number of SACs can be set up under a single CAN and the CAN holder may distribute these SACs to other individuals. In this case, it is up to the CAN holder to control the spending limit for the account. This may be done by requesting that a dollar limit be set on a SAC and/or by restricting the types of services that a SAC may use.

Conditions of Usage

The following conditions of usage apply to all UTCS SACs:

1. A SAC is issued to the Customer Account holder and, as such, is non-transferable without the authorization of UTCS Accounting Services.
2. Other persons using such SACs under the supervision of the Account holder must be registered with UTCS Accounting Services.
3. All authorized code users are expected to take the prescribed steps to protect their codes from unauthorized use. (See following articles.) The code should be used solely for accessing private files created by the code, other special files made available to that code, or files in public libraries.
4. For their own protection, users are requested to report any improper use of the computing facilities to UTCS Accounting Services.

continued...

Accounting Services continued

Billing: Monthly Statements

At the end of each month, charges accrued for the month are billed against the Blanket Purchase Order which funds computing services at the various account and access levels. The unused portion of the encumbered amount of the Blanket Purchase Order becomes the BPOA allotment for the following month's usage. At the end of the month, detailed statements are mailed to the individuals who are responsible for budget control at the various levels within each Department.

The types of reports are:

Departmental Summary Report - sent to Departmental Representatives showing a record of activity on each BPOA and CAN used by the Department.

BPOA Report - mailed to persons in whose name the Purchase Orders have been raised (BPOA holder). This report shows a summary of all activity on CANs drawing allotments from that BPOA.

CAN Report - addressed to persons in the Department responsible for control of expense at the CAN or project level. This report contains a detailed summary of job charges, storage charges, and miscellaneous items billed directly to the CAN.

If you have any questions about UTCS accounting, please contact Marg Doherty at 978-3960.

Marg Doherty

Protect Your Codes

Users should take the following precautions to ensure optimal security for their Service Access Codes (SACs).

- Think of your SAC and password as a credit card or blank cheque - **Don't Lose It.**
- **Do Not Imbed Job Statements** in datasets.
- **Obscure the Password** at your terminal session.
- **Avoid the Sharing of SACs** by establishing a separate SAC for each user.
- Instruct the accounting office to **Lock Your SAC** if you do not plan to use it for a period of time.
- **Watch the Balance or Accumulated Usage** to determine if unauthorized activity is taking place on your SAC.
- **Request a Spending Limit** on the SAC.
- **Report Suspected Misuse Immediately** to the Accounting Office.

Marg Doherty

Billing for Special Services

UTCS provides a number of services which are payable by the user via a debit memo charging a *non-computing* appropriation account. (Computing appropriation accounts are 1-XXX-XXX-90, 95, and 98.)

Normal machine services are charged through the UTCS accounting system to a Purchase Order encumbering funds on a computing or grant appropriation. (See the article "Accounting Services".) This procedure causes billing to a user's computing Purchase Order to be credited to UTCS as 'Income'. This income can not be used in any way by UTCS.

Unlike machine services, Special Services are those services not centrally funded by the University. This requires that usage be billed separately in order to have the billed amounts credited to UTCS as 'Expense Recoveries'. The revenue designated as recoveries can then be used to pay for the cost of providing these services.

Services currently in this special class are:

Staff Services:

- Job Handling Operations

Hardware:

- Small Parts
- Electrical Parts
- Computer Systems Rental/Lease

Short Courses:

- Registration Fees

Documentation and Supplies:

- UTCS produced Documentation
- Manuals and Books
- Magnetic Tapes
- Terminal Supplies (ribbons, printwheels, etc.)
- Computer Paper and Forms (by box)

Communications:

- Data Channels
- Modems/PACX Rental & Sales
- Terminal Rentals
- Port Lease
- Datapac
- Mainframe File Transfer Facility

Hardware and Equipment Repair:

- Service Calls
- Annual Service Contracts

Special Forms Output

- Non Standard Forms (Thesis Paper, Labels, etc.)
- Phototypesetting (CAT, Varian)
- Xerox 9700

Marg Doherty

Additional Comments to the above article:

There are a number of additional points that I particularly want to emphasize about Special Services and Recoveries. In areas where we have had no control over the demand (and hence the costs) for services, we have started to make base budget transfers of our funds to users. This is the case for special forms. I have heard complaints from individuals who said they were suddenly being charged and had no money to pay. Their departments were certainly allocated funds from UTCS's budget, and it's up to the user to obtain these by whatever internal process is usual.

A more serious problem for UTCS are people using services such as the Xerox 9700 without having established a noncomputing appropriation to pay for it, and then continuing to do so after being reminded. After adequate warning, such users will have all computing access suspended until the situation is resolved. This seems rather harsh, however this service is paid for with real money out the door, for which we are not funded. In times when we

continued...

Billing continued

cut budgets by releasing people, we cannot *tolerate artificial deficits simply because people don't pay their bills.*

Warren Jackson

Documentation Changes

It is no secret to our users that USERBOOK, the backbone of UTCS documentation, needs updating and streamlining. Planning for a major restructuring of documentation has long been underway. Although the difficulties involved in such a task are formidable, implementation has now begun.

The new structure will provide a printed catalogue of UTCS products and services. This catalogue will be divided into large sections arranged by very general subjects, such as Access or Storage. Within each section (i.e. under each subject), there will be an abstract for each product or service appropriate to that section. This abstract will supply potential users with the information they need to decide whether this is the best product for their purposes.

The more detailed UTCS documentation and some vendor documentation will be available online only, but may be printed out by an interested user. A small proportion of UTCS documentation will continue to be available in hardcopy, but this proportion is expected to decrease as the restructuring of documentation gets underway. Vendor produced manuals and user's guides, such as those produced by IBM and SAS, will not be affected by these changes.

A particular problem for users is presented by the interdependence among many of the present USERBOOK modules. Such cross referencing is inevitable, given the subject matter, but it means that the new documentation will often point, temporarily, to old, possibly outdated documentation. In the short run, this is bound to cause some frustration for everyone, but work will proceed as quickly as possible to get all of the new structure in place. Meanwhile, we will do our best to help people over the gaps.

Martha Parrott

Scarborough College

This summer has seen both personnel and hardware changes at the computer centre at Scarborough College. Bob Blackburn, the computing co-ordinator for many years, has left to join University of Waterloo and I will be taking his place. Prior to this position, I worked in the Central Advising Office as a senior consultant, with experience in computing, statistics, and research design in various disciplines. Shirly Manimalethu has rejoined the staff at the centre as the operator/advisor. There are also five part-time operator/advisors who work evenings and weekends at the centre.

There have been changes to the physical layout of the centre in order to accommodate a new VAX 750 system and an additional twenty-two XT100 terminals. We have also removed all but one of the keypunches and expect this service to be phased out in the future.

Hardware and services available at the centre include:

- Local UNIX services - forty terminals and one printer connected to our new VAX 750 with five megabytes of

continued...

Scarborough College continued

memory. This system will be used primarily for teaching undergraduate computer science courses using the Turing language.

- LIBRA services - ten terminals and one printer connected to our other VAX 750 system with two megabytes of memory. It has communications to the IBM 3033/N12 and the DEC-10 downtown.
- CDF UNIX services - seven terminals and one printer (shared with LIBRA) for access to the Computing Disciplines Facility located downtown.
- Batch services - a card reader and printer (shared) connected to the IBM 3033/N12 via the VAX 750 and one keypunch.
- Public services - seven screen terminals and four hardcopy terminals for accessing other UTCS services via 300 baud modems.
- Scarborough access from downtown - nine terminals will be available to Scarborough students at Engineering Annex, in Room EA107B.

The computer centre supports all courses involving computing as well as other academic and administrative computing at the college and provides access to all computing services offered by UTCS.

If you have any questions about the new equipment or need help with any of your computing, please feel free to drop by Room S626 or call 284-3173.

The normal hours of operation at the centre during the fall and winter terms are:

Monday - Friday	09:00 - 24:00
Saturday	10:00 - 17:00

There will be some changes to these hours throughout the year due to holidays, exam and reading weeks, etc. These changes will be posted in advance.

William Barek

MVS System Product 1.3.1

On August 15, a new version of the operating system, MVS SP 1.3.1 was installed on the IBM 3033/N12. The major impact on users will arise from the upgrading of the JES2 subsytem and will be felt mainly in the areas of JCL and TSO use. (For more information on the effects on TS0, see article "TS0 as affected by MVS 1.3.1" in this month's issue of *COMPUTERNEWS.)*

Details of the new system and its impact are available online through the following mechanisms:

WYLBUR	DO MVSNEWS
TSO	MVSNEWS
Batch	// EXEC MVSNEWS

This document will be updated as new developments occur. Users will be informed about updates through HOTNEWS and TSO logon messages.

If you encounter any problems, please call the Central Advising Office at 978-HELP.

Bill Lauriston

MVS Dataset Monitor

As discussed in last month's issue of *COMPUTERNEWS,* UTCS will be introducing changes to its dataset monitoring system to allow for better use of the limited online storage space available. Users were advised to begin cataloguing their datasets.

As of Monday, September 19, UTCS will apply the following new policies:

1. All online datasets must be catalogued.
2. Online multi-volume datasets and diskbased generation data groups (GDG's) will not be supported.

The Dataset Monitor runs daily (after backups) and will delete (with no day of grace):

1. All non-catalogued datasets that reside on monitored volumes, whether registered or not.
2. The catalogue entries of datasets that are catalogued to a monitored volume but which do not exist on that volume.
3. Multi-volume datasets and diskbased GDG's.

Implicit in the policy that datasets be catalogued is that online datasets must be uniquely named. Users are urged to review their online datasets, cataloguing (and renaming, if required) as appropriate. As before, all datasets must be REGISTERed to ensure retention, so if datasets are renamed for cataloguing, they must also be REGISTERed.

Over the weekend prior to September 19, datasets violating the new policies will be backed up in a special operation. The online copies will be candidates for deletion when the dataset monitor runs.

Further information will be broadcast through online system messages.

Bill Lauriston

TSO as affected by MVS SP 1.3.1

The introduction of MVS SP 1.3.1, while not generally impacting most users, does cause significant changes in TSO usage, particularly in the submission, fetching, and printing of jobs.

Commands which have been affected include DUPLICAT, FETCH, FREEALL, PURGE, QUEUE, ROUTE, SCHEDULE, SHOW, and their options. In some cases, the command has been temporarily installed to allow users time to convert; in others, the command has been replaced by a command that performs similar, though not necessarily identical, functions. There is also the addition of a new MSGCLASS parameter for the JOB statement.

Online documentation detailing these changes is available through the use of the MVSNEWS command. A hardcopy can be obtained through the general purpose job stream by submitting the following:

```
// EXEC MVSNEWS
```

This document will continue to be revised as changes are made to the system.

As the changes are significant, TSO users are urged to study this documentation carefully and in considerable detail. Users who have any questions should contact the Central Advising Office at 978-HELP *before* using these new commands.

Herb Kugel

3380 Disk Conversion

The contract between UTCS and Control Data Corporation (CDC) for disk storage, which has been in effect for five years, expires in December of this year. UTCS has decided to replace the existing configuration with IBM 3380s, the latest generation of disk subsystems.

The benefits offered by the 3380s include

- improved price/performance
- improved reliability, availability, and serviceability
- improved environmental characteristics

and these weighed heavily in their favour.

The impact of this decision is wide-ranging, requiring a major conversion effort on the part of UTCS and users as well as the termination of disk rental and mounting services. In anticipation of the change, no new requests for disk rental will be considered.

Conversion activities will begin in October. Insofar as it is possible, UTCS will effect the transfer of datasets from the current 3330s to the 3380s and will convert all UTCS-maintained control files containing device type references. Users, however, will be responsible for converting their own files, if necessary, once they have been transferred.

Information and advice on user conversion requirements will be produced and broadcast soon. If you have any questions or special concerns, call Bill Lauriston at 978-3579 or Herb Kugel at 978-7179.

Herb Kugel
Bill Lauriston

SAS/OR

UTCS is in the process of acquiring another new package for its SAS users. SAS/OR (Operations Research) is a collection of SAS procedures for business planning and scheduling using operations research tools. SAS/OR includes procedures for solving general assignment, transportation, and linear programming problems; determining minimum cost flow, maximum flow, and shortest path through a network; and scheduling activities that make up a project. SAS/OR contains these procedures:

ASSIGN	assignment problems
CPM	critical path analysis
LP	linear programming methods
NETFLOW	network analysis
TIMEPLOT	plotted results from PROC CPM
TRANS	transportation problems.

Also included are the LINPROG matrix library call routine for solving linear programs in PROC MATRIX and a conversion macro SASMPSX.

At the present time, it is hoped that SAS/OR will be available in the fall. The *SAS/OR User's Guide* will be available in the Information Office. Please watch HOT-NEWS and SASnews for further details on this project.

Diane Mitchell

SAS Technical Reports

SAS has just published two new technical reports that should be of interest to many users. The most important one is *The Master Index to SAS Documentation (G-103).* This report was compiled in response to user interest expressed through the SASware ballot. The index includes entries from all *User's Guides, Manuals,* and *Views,* as well as from some other major technical reports. The SAS Institute plans to update the *Master Index* on a regular basis so that it will reflect the most recent editions of all books.

Technical Report P-127, Enhancements to the SAS Macro Facility, will be helpful for anyone using, or considering using, the new SAS macro facility. This report documents enhancements that have been added to the macro facility since the *1982 SAS User's Guide: Basics* was published. It also contains examples illustrating the new features and demonstrating some programming techniques in the macro facility.

These technical reports will be available for purchase through the UTCS Information Office.

Diane Mitchell

SPSS-X

SPSS-X 1.1 is now available for general testing. The announcement of testing has been delayed due to difficulties in receiving shipment of the new *SPSS-X User's Guide.* They have now been received and can be purchased at the UTCS Information Office.

Programs which run under SPSS will NOT usually run under SPSS-X. Appendix A in the *SPSS-X User's Guide* will be invaluable to users changing existing SPSS jobs to SPSS-X. The bulk of changes between SPSS and SPSS-X are in the areas of file definition and data transformation. This means that users should carefully read Chapter 3 (Defining Data) and Chapter 5 (SPSS-X System Files).

SPSS-X provides a method for users to easily obtain information on how to use SPSS-X here at UTCS. To get a copy of this documentation, run the following short job:

```
//  EXEC SPSSX
//SYSIN DD *
INFO LOCAL
/*
//
```

The current version of SPSS will remain available for quite a while. However, users are encouraged to start using SPSS-X as soon as possible.

UTCS has been choosen as a test site for Release 2.0 of SPSS-X. This new release includes LISREL, a new PROBIT procedure, and support for user-added procedures. It is hoped that SPSS-X 2.0 will be available soon.

For assistance and further information about SPSS-X, please call the Central Advising Office at 978-HELP.

Diane Mitchell

Summer Class C Rate Expires

Class C is a low cost batch service on the IBM 3033/N12 computer. Jobs run in this class are not charged for CPU time used. For most of the year charges incurred for other resources (e.g., memory usage, tape mounts, and lines printed) are based on the rates used for Classes A and B and a service factor of 0.75. However, during the summer months the charging rate for memory usage is reduced to one half its normal value for Class C jobs.

The purpose of this note is to point out to our users that this reduced memory usage rate will revert to its normal value at midnight on Sunday, October 2, 1983. Any Class C jobs awaiting execution at this time will be charged using the normal, higher memory usage rate when they are executed.

Bob Chambers

Hours of Service

The following hours of service are in effect for:

Thanksgiving Day

	October 8 (Saturday)	**October 9 (Sunday)**	**October 10 (Monday)**
3033/N12 GPJS(Classes B,C,E), TSO, Calcomp	10:00-18:00	10:00-18:00	closed
3033/N12 GPJS(Class A), WYLBUR, APL,	10:00-18:00*	10:00-18:00*	unattended
DEC1090, 11/70	10:00-18:00*	unattended	unattended
BICS	unattended	unattended	unattended
LIBRA	unattended	unattended	unattended

* Running unattended outside these hours.
Normal hours of service for all systems will resume Tuesday, October 11, 1983.

In the event of any changes to the above schedules, a notice will appear in HOTNEWS one week prior to the holiday.

New Location of Microcomputer Facility

The Microcomputer Facility has moved to the McLennan Physics Laboratories, Room 220A. However, many of its microcomputer related books and periodicals have been transferred to the Computer Library in the Engineering Annex, Room 206, and will be available to the University community.

Grant Davis

Mainframe File Transfer Facility

The Mainframe File Transfer Facility is a new UTCS service introduced in August. It provides for file transfers from a user's microcomputer (or minicomputer) to one of UTCS's mainframes through PACX class 73. In particular, it is suited for transfers to the IBM 3033/N12 although users can also transfer files to the DEC-10 or PDP 11/70.

Users of this facility will require a File Transfer Code (FTC) to access this service as well as a GPJS SAC. The charges for this facility are in two parts.

1. The FTC will be charged $4.50 per hour of connect time. In addition, there will be an administrative charge of $10.00 per month. (This charge will be waived if there was no activity during a given month.)
2. The GPJS SAC will charged for the processing on the IBM 3033/N12. Note: the charges for 'card image' input through this service will be 50 percent of the regular rates for input to the IBM.

To obtain a FTC, contact the UTCS Accounting Office at 978-8703.

For more information and detailed instructions on its use, see the *Guide to Mainframe File Transfer Facility* which will be available soon in the Information Office.

Philip Murton

Scribe Formatting

UTCS is continuing to offer courses on the SCRIBE formatting program. SCRIBE, available on the DEC-10, allows printing of a file on a variety of output devices without substantial revision to the input file. This advantage, along with SCRIBE's present document formats and enhanced error handling, makes it an attractive formatter for many text projects in an academic environment.

People unfamiliar with an editing program on the DEC-10 may wish to register for the SOS/SCRIBE course. This is an extensive hands-on course which teaches both the SOS editor and the fundamentals of the SCRIBE formatting program. Editing programs other than SOS may also be used with SCRIBE; however, UTCS only offers courses for the SOS editor.

For users already familiar with an editing program on the DEC-10, a six-hour SCRIBE course is offered. In this hands-on course, discussion of the more popular document types is built around exercises using them.

For further information on these courses, see the article "UTCS Short Courses" in this issue of *COMPUTERNEWS.*

Dawne Smith

Changes in 9700 Rates

As of August 1, UTCS increased the rates for using the 9700 printing service. UTCS had to increase its rates because it found that the previous rate was not covering UTCS's costs to offer the service. The new rate is 7 cents per page rather than the previous rate which was 6 cents per page. The $5.00 setup charge per job remains unchanged.

News of this increase was broadcast through the HOTNEWS facility and current users were notified by letter.

All University of Toronto users are reminded that 9700 charges are not charged against the user's CAN, but must be paid out of real money sources rather than from -90 and -98 appropriation numbers. Please call the Accounting Office at 978-7148 for more information.

John Bradley

Farewell to the CRF Lab

As discussed in last month's issue of *COMPUTERNEWS,* the CRF Lab will cease to operate shortly. We have a *large* number of disk and tape volumes containing data created by users of this system at various times. If you used the CRF Lab in the 1970s or 80s and want to retrieve any of your data, *please act now.* The capability for transferring this data to other computers will be lost when the lab is finally closed down.

The PDP 11/05 is being offered for sale either as a system or as components. It has an 11/05 processor, a GT40 graphics unit, a TU10 800bpi magnetic tape with one drive, two RK05-compatible drives, and a paper tape reader/punch. This system runs RT-11 but could be set up to run the UCSD p-system, Forth, or other operating systems. It is not suitable for running UNIX nor for RSX-11M (although it could run RSX-11S). If you would like to make a bid on all or parts of this machine, please contact Arny Sokoloff at 978-4549.

The PDP 11/40 with GT44 graphics has been the mainstay of the lab. We would like to find another party to carry on operation of the lab as a service for some fixed period of time, and would transfer ownership of the machine to any University of Toronto department or Institute willing to undertake to operate it in its present state and pay the maintenance fees. There is considerable room for negotiation here. Please contact Arny Sokoloff as above if you are interested. If no taker is found for this service, then this system too will be offered for sale in whole or in parts.

In any event, please be advised that UTCS will cease to offer the CRF Lab as a service on November 1, 1983.

Ian F. Darwin

Fall Short Courses

This fall, UTCS has scheduled a number of non-credit short courses. These non-credit courses deal with the various products and services supported by UTCS.

The duration of these courses is anywhere from two to fifteen hours and, depending on the course, may be a one day session or spread over a five day period. Enrollment in these courses is limited so please register early.

The non-refundable registration fee for the courses is $10.00, payable in cash or non-computing appropriation, and must be paid ten days prior to the beginning of a scheduled course. Registrants are also required to hold a valid account for use during any hands-on courses. Accounts can be arranged through the UTCS Accounting Office, McLennan Physical Laboratories, Room 337. Or call 978-8703 for University of Toronto accounts or 978-7148 for other accounts.

Those interested in taking these courses must register in advance with:

Educational Services Support Specialist
Engineering Annex, Room 207
978-4565

These courses will again be made available later in the year. Please note that some courses are not, as yet, scheduled. If you wish to register for these courses, you may do so by calling 978-4565 and your name will be put onto a waiting list. You will then be contacted as to the exact date and time of the course when it becomes available.

Courses are held in the UTCS Education Facility, Room 221, McLennan Physical Laboratories.

(Anyone interested in credit courses should contact the Dept. of Computer Science at 978-6360).

DDS101 - Introduction to IBM Disk Datasets

This course is intended for people who are switching from cards to interactive computing or for people who would like to use disk files on the IBM system. This course is a prerequisite course for anyone who is planning to take the WYLBUR short course.

DDS101 will present the basic concepts required to work with disk datasets on an IBM system. The course includes an overview of steps required to create and maintain datasets. Some examples of the application of datasets in WYLBUR, SAS, and SPSS will be given.

Date: September 16 and October 14, 1983
Time: 1:00 p.m. - 3:00 p.m. (for both dates)

DEC101 - DECsystem-10 Novice Users

This is an introductory course designed to provide novice users with the basic information required to start using the DEC-10.

Major Topics of Discussion: Terminal input/output capabilities (provided by the system), login/logout, disaster handling, file management and handling, how to get hardcopy, how to reclaim lost files, and how to get help on the system. There will not be any detailed discussion of text editors or formatters.

Date: September 22, 1983
Time: 9:30 a.m. - 4:00 p.m.

DEC201 - DECsystem-10 Assembler

This course will consist of five lectures aimed at discussing MACRO-10, the assembler language used on the DEC-10. This course is intended for experienced DEC-10 users only. (See DEC101)

Major Topics of Discussion: Hardware considerations, DEC-10 instruction set, assem-

continued...

Fall Short Courses continued

bler formatting and pseudo-operations, monitor calls, and debugging techniques.

Date: September 12 - 16, 1983
Time: 10:00 a.m. - 12:00 noon

DEC301 - DECsystem-10 Advanced Users

This course will discuss the DECsystem-10 in some detail. The object of the course is to provide information that would be useful to most users over the long term. Emphasis will be on details not likely to be of interest to those users who are mainly concerned with text processing rather than programming. This course is only for users who have some experience with the DEC-10 and is not intended for novice users. (See DEC101.)

Major Topics of Discussion: System structure and components, little known features, Monitor Interpreted Commands (MIC), file system details (including the file daemon), tape use and file backup/restore, a basic introduction to TECO, the mail system, and the IBM RJE. Also included will be a thorough examination of all monitor commands and tools for programmers.

Date: October 6, 1983
Time: 9:30 a.m. - 4:00 p.m.

JCL101 - JCL for Beginners

This course is intended as an introduction to IBM JCL (Job Control Language). Users taking this course will be expected to have some knowledge of a programming language or experience with a computing application. Examples and assignments will assume job submission via the card reader.

Major Topics of Discussion: use of JOB, EXEC, and DD statements.

Date: October 24 - 28, 1983
Time: 11:00 a.m. - 12:00 noon

SAS101 - Introduction to SAS

This is an introductory course that places a heavy emphasis on concepts and the basic approach to statistical computing. Some elementary JCL will be covered and enough SAS will be taught to create a file from 'simple' raw data for preliminary analysis. Some reference will be made to some of the features in SAS. This is not a hands-on course, though exercises may be given out for students to do after the course.

Major Topics of Discussion: Definition of terms (i.e., variables, observations, and missing values), creation of files from raw data, data cleaning, and descriptive statistics.

Date: September 12 - 15, 1983
Time: 2:00 p.m. - 4:00 p.m. (Mon.)
2:00 p.m. - 3:00 p.m. (Tues.-Thurs.)

Date: September 27, 29, 30, 1983
Time: 2:00 p.m. - 4:00 p.m.
(Tues.,Thurs., & Fri.)

Date: October 11 - 14, 1983
Time: 10:00 a.m. - 12:00 noon (Tues.)
10:00 a.m. - 11:00 a.m. (Wed.-Fri.)

SAS201 - Intermediate SAS

This course is broken up into five separate, one hour sessions, each covering a specific topic. Students have the option of choosing which topics are of interest to them and may register for as many sessions as they desire. Sessions 4 and 5 cover new topics which are only now being introduced.

Below are the session breakdowns for SAS201.

Session 1 - Input Formats and Report Writing

Topics of Discussion: SAS formats, pointer controls and format modifiers, PUT and FILE statements, and LAST and FIRST by-variables. Some examples of how these statements can be used together to produce customized reports.

continued...

Fall Short Courses continued

Session 2 - SAS Regression Procedures

Topics of Discussion: SAS uses several procedures for regression analysis. Similarities and special features of these procedures will be discussed giving the student a better understanding of how to decide which procedure to use.

Session 3 - SAS Multivariate Procedure

Topics of Discussion: Procedures for analysis of variance, multivariate analysis, discriminant analysis, and clustering. Overview of these procedures and their uses will be presented.

Session 4 - SAS Macro Language

Topics of Discussion: SAS Macro Language which has been greatly expanded in SAS82. New macro features will be discussed and potential uses and abuses will be examined.

Session 5 - PROC TABULATE AND PROC CALENDAR

Topics of Discussion: TABULATE which constructs tables of descriptive statistics from compositions of classification and analysis variables and CALENDAR which displays data from a SAS dataset in a month-by-month calendar format. Examples of these two new procedures will illustrate flexibility and usefulness.

Date: November 7 - 11, 1983
Time: 2:00 p.m. - 3:00 p.m.

SAS/GRAPH101 - Introduction to SAS/GRAPH

This course is designed to teach users the basics of SAS/GRAPH and how to use the various graphics devices which are available at the U of T. It is intended for those who have prior knowledge of SAS. (See SAS101).

Major Topics of Discussion: Special statements required and their options, a description of some of the SAS/GRAPH PROCS which are available, and hardware devices and their options.

Date: October 31, 1983
Time: 1:00 p.m. - 4:00 p.m.

SCR102 - SCRIBE for Beginners

This course is intended for users who are already familiar with an editor on the DEC-10. (See SOS/SCR101)

Major Topics of Discussion: Use of predefined document formats, formatting commands, and file manipulation.

Date: October 20 - 21, 1983
Time: 9:30 a.m. - 12:30 noon

SOS/SCR101 - SOS/SCRIBE for Beginners

This introductory course is designed to teach users basic text processing using the SOS editor and the SCRIBE formattor on the DEC-10.

Using predefined document formats such as letter, article, thesis, manual, etc., a manuscript file is prepared using the SOS editor. The SCRIBE formatting program is then run to produce a document file. SCRIBE also allows experienced users the flexibility of introducing variations to these document types.

As this is a hands-on course, registrants must arrange to set up a DEC account prior to the start of the course by contacting the UTCS Accounting Office.

Major Topics of Discussion: Use of the editor commands, formatting using SCRIBE, and manipulation of files.

Date: September 26 - 30, 1983
Time: 9:30 a.m. - 12:30 noon

UNIX201 - Introduction to UNIX-TBL

This brief course introduces users to the UNIX program TBL which interprets for-

continued...

Fall Short Courses continued

matting commands and options into a variety of table layout designs and provides output on phototypesetting devices. This course is intended for users who are familiar with UNIX text processing.

As phototypesetting is paid for in unsubsidized funds (i.e., real money), it is necessary to arrange for typesetting to be made available on your UNIX account prior to beginning the course by contacting the UTCS Accounting Office at 978-8703.

Major Topics of Discussion: Column layouts, options, formatting commands, and use of the Varian and CAT/8 phototypesetting output devices.

Date: October 4, 1983
Time: 9:30 a.m. - 4:00 p.m.

WYL101 - Introduction to WYLBUR

This introductory course will present an overview of WYLBUR concepts. Students, through hands-on practice, will be taught data collection, batch job submission, and output retrieval. Knowledge of at least one batch processor (FORTRAN, PL/I, etc.) is required. This course is intended for those users who have previously attended the DDS101 Course.

Registrants must arrange to set up a WYLBUR account prior to the beginning of the course by contacting the UTCS Accounting Office at 978-8703.

Major Topics of Discussion: Data collection and manipulation, file handling, text editing, the DO EXEC, and how to get help.

Date: September 19-21 and October 17-19, 1983
Time: 10:00 a.m. - 12:00 noon

Irene Rosiecki

Change Committee

Changes to the IBM 3033/N12 and IBM 4341 MODII

1. UTCS procedures on the IBM 3033/N12, were changed from SYSOUT=A to SYSOUT=* on June 30.
2. The new operating system for the IBM 3033/N12, MVS/SP 1.3.1 was installed on August 13.
3. The TCAM TSO default translate table was installed with MVS/SP 1.3.1 on August 13.
4. A file transfer facility for microcomputers to the IBM 3033/N12 was installed on August 2. Charging will begin on September 6.
5. Three 3330-II CDC disk drives were removed from the IBM 3033/N12 on August 2.
6. Effective August 10 no new 3330-1 disk packs will be rented to users.
7. UTCS plans to add twelve CLASS 32 lines to PACX to access the IBM 3033/N12.
8. ATMS was removed from the IBM 3033/N12 on July 15. The signon screen, NETMON was changed to reflect this on August 5.
9. The CALCOMP writer was upgraded on July 6.
10. Effective September 7, VS/FORTRAN (LANG=66) will be the default release on the IBM 3033/N12. FORTRAN H Extended will be given CLASS B support. All other FORTRAN compilers will be CLASS C. The prompter on TSO will be changed to access VS/FORTRAN in the future.
11. HSJS service via GPJS jobs with CLASS=W will no longer be available as of September 5.
12. The November 1982 release of APL is scheduled for installation on September 18.

continued...

Change Committee continued

13. CLASS C memory usage rate on the IBM 3033/N12 is presently at a discount. As of midnight October 2 it will revert to the normal winter rate.
14. IBM 3033/N12 CAN holders will no longer be able to deny online disk storage to SAC holders in the future.
15. The policy on the IBM 3033/N12 that datasets must be catalogued will be in effect from September 5 onwards.
16. UTCS will be installing LISREL on the IBM 3033/N12 in the future.
17. UTCS will also be installing SAS/FSP (FULL SCREEN PRODUCT) on the IBM 3033/N12. SAS/OR (OPERATIONS RESEARCH) will be installed for testing.
18. SAS release 82.3 will be installed for testing on both the machines.
19. Eight megabytes of memory will be added to the 4341 as soon as possible.
20. UTCS plans to add the first string of 3380 disk storage to the IBM 3033/N12 on October 14.
21. Data streaming will be installed on the first and second channel pairs on the IBM 3033/N12. This is scheduled for the weekends of September 3 and September 10 which means the system will be unavailable from 0800 September 3 to 2400 September 4 and from 0800 September 10 to 2400 September 11.

Changes to the DECsystem-1090

1. FORTRAN-10 Version 7 is now the default release and was installed in SYS: on August 2.
2. UTCS plans to install NAg MARK 10 in the future.
3. GOULD plotter support for the DECsystem-1090 was installed on July 21.

Changes to the PDP11/70 (UNIX)

1. PACX CLASS 70 which accesses UNIX will be segmented on August 24 to support STATISTICS.
2. One DZ port was added to the UNIX system on July 28.

Changes to Other Systems and Services

1. Surcharges for non University of Toronto users were increased from 1.1 to 1.3 and from 2.2 to 2.6 as of August 2.
2. 9700 charges were increased from 6 to 7 cents a page due to increased costs to UTCS from our vendors. This became effective August 2.
3. PACX revision D5 control logic was installed on July 27.
4. PACX will be converted to single scan mode by September 3. This has been in test since July 27.

Cecilia Welch

Personnel Changes

Ian Darwin formerly Micro Systems Integration Consultant with Communications and Technical Services has joined the Systems Group as Systems Programmer working on the UNIX systems. Also joining the Systems Group is **Bruce Freeman.** Bruce worked as a Part-time Advisor while completing his undergraduate degree in Computer Science.

Leaving the Systems Group is **Cecilia Welch.** After three years of service Cecilia has decided to join the Eaton/Bay Trust Company. Good Luck in the future.

Shirley Manimalethu has returned as Advisor/Operator at Scarborough College. Welcome!

Elizabeth Weitmann

Recent Acquisitions in the Computer Library

ACM-SIGMOD International Conference on Management of Data, San Jose, Cal., May 1983.
Proceedings.
New York, ACM, 1983.

ACM Symposium on Principles of Programming Languages, 10th, Austin, Texas, Jan. 1983.
Conference record.

Baker, C.T.H. and Phillips, C., eds.
The numerical solution of nonlinear problems.
Oxford, Clarendon Press, 1981.

Bentley, Jon Louis.
Writing efficient programs.
Englewood Cliffs, N.J., Prentice-Hall, 1982.

Elsevier Science Pub. Co.
The software catalog: microcomputers. (Spring 1983)
New York, Elsevier, 1983.

Gear, Charles William.
Numerical initial value problems in ordinary differential equations.
Englewood Cliffs, N.J., Prentice-Hall, 1971.

Gill, P.E., Murray, W., and Wright, M.H.
Practical optimization.
London, Academic Press, 1981.

Gottlieb, David and Orszag, S.A.
Numerical analysis of spectral methods: theory and applications.
Philadelphia, S.I.A.M., 1977.

Hawaii International Conference on System Sciences, 16th, Honolulu, Jan. 1983.
Proceedings, v.1, ed. by H.K. Berg et al.
North Hollywood, Cal., HICSS, 1983.

International Conference on Mathematical Studies of Information Processing, Kyoto, Japan, 1978.
Mathematical studies of information processing, ed. by E.K. Blum et al.
Berlin, Springer-Verlag, 1979.

International Symposium on Medical Information System, 4th, Osaka, Japan, Oct. 1978. (MEDIS '78)
Proceedings.
Tokyo, Kansai Institute of Information Systems, 1979.

Lavenberg, Stephen S., ed.
Computer performance modeling handbook.
New York, Academic Press, 1983.

MacLennan, Bruce J.
Principles of programming languages: design, evaluation and implementation.
New York, Holt, Rinehart and Winston, 1983.

Meertens, Lambert.
Draft proposal for the B programming language: semi-formal definition.
Amsterdam, Mathematisch Centrum, 1981.

Mosco, Vincent.
Pushbutton fantasies: critical perspectives on videotex and information technology.
Norwood, N.J., Ablex Pub. Comp., 1982.

National Computer Conference, (1983)
Proceedings, v.52.
AFIPS Press.

Pagan, Frank G.
Formal specification of programming languages.
Englewood, Cliffs, N.J., Prentice-Hall, 1981.

Pavlidis, Theodosios.
Algorithms for graphics and image processing.
Rockville, Md., Computer Science Press, 1982.

Peterson, James L. and Silberschatz, Abraham.
Operating system concepts.
Reading, Mass., Addison-Wesley, 1983.

Rosen, Saul.
Lectures on the measurement and evaluation of the performance of computing systems.
Philadelphia, S.I.A.M., 1976.

continued...

Computer Library continued

Schiller, Herbert I.
Who knows: information in the age of the Fortune 500.
Norwood, N.J., Ablex Pub. Corp., 1981.

Wilensky, Robert.
Planning and understanding: a computational approach to human reasoning.
Reading, Mass., Addison-Wesley, 1983.

Witten, Ian H.
Principles of computer speech.
London, Academic Press, 1982.

Stephanie Johnston

UTCS Terminal and Advising Sites

Names and Locations

- **Central Advising Office (CAO), 978-HELP**
- **Education Facility (Educ),** McLennan Labs, 60 St. George St., Room 221
- **Engineering Annex (EAT, EUT, CDF),** 11 King's College Road, Rooms 103, 104, 107, 201, 203.
- **Erindale College (Erin), 828-5339,** Mississauga Road, Erindale Campus, Rooms 2005, 2039, 2045
- **New Physics (NPT),** Burton Tower, 60 St. George St., Room 1202
- **Robarts,** Robarts Library, 130 St. George St., Room 1061A
- **Scarborough College (Scar), 284-3122,** Military Trail, Scarborough Campus, Room S624
- **Sidney Smith (AST & ASUT),** 100 St. George St., Rooms 1071, 1073, 2105
- **St.Michael's College,** 121 St. Joseph St., Room 101
- **Trinity College,** 6 Hoskins Ave., Room 024
- **Victoria University,** 73 Queens Park Cres., Room 012.

Sites	**Hours of Operation**				**Restrictions***	**Advising**
	Mon-Thurs	Fri	Sat	Sun		
AST	8:00-22:00	8:00-22:00	8:00-22:00	8:00-22:00	Research	Rm 2133
ASUT	24 hrs/day	24 hrs	24 hrs	24 hrs	BICS	Rm 2100
CAO	10:00-18:00	10:00-18:00	closed	closed	Research	978-HELP
CDF	24 hrs/day	24 hrs	24 hrs	24 hrs	Res/Under	No
EAT	24 hrs/day	24 hrs	24 hrs	24 hrs	Research	Rm 106
Educ	9:00-16:30	9:00-16:30	closed	closed	Research**	978-HELP
(outer)	9:00-23:00	9:00-16:30	closed	closed	Research	978-HELP
Erin (2039)	9:00-21:30	9:00-16:30	12:00-17:30	12:00-17:30	Research	Rm 2005
(2045)	9:00-21:30	9:00-16:30	12:00-17:30	12:00-17:30	Undergrads	Rm 2005
EUT	24 hrs/day	24 hrs	24 hrs	24 hrs	Undergrads	No
NPT	24 hrs/day	24 hrs	24 hrs	24 hrs	Research (Key access)	978-HELP
Robarts	8:30-23:00	8:30-18:00	9:00-17:00	closed	BICS	No
Scar	9:00-24:00	9:00-24:00	10:00-17:00	closed	Research Undergrads	Rm S625 Rm S627, S628, S628A
St.Michael's	24 hrs/day	24 hrs	24 hrs	24 hrs	BICS	Arranged by College
Trinity	8:00-23:00	8:00-23:00	8:00-23:00	8:00-23:00	BICS	Arranged by College
Victoria	8:30-23:00	8:30-23:00	closed	closed	BICS	Arranged by College

* Research includes graduates, faculty, staff. ** May be unavailable due to UTCS courses.

Advising Hours

AST/ASUT	Monday to Friday, 10:00 - 18:00	EAT	Monday to Friday, 13:00 - 17:00
CAO	Monday to Friday, 10:00 - 18:00	Erin, Scar	During normal hours

Services Available

	BICS	Keypunch	LIBRA	PACX	Printers	Oracle	UNIX
AST	N	Y	N	Y	Y	N	N
ASUT	Y	N	N	N	Y	Y	N
CDF	N	N	N	N	Y	N	Y
EAT	N	Y	N	Y	Y	N	N
EUT	Y	N	Y	N	Y	Y	Y
Educ	N	N	N	Y	N	N	N
Erin	N	N	Y	Y	Y	N	Y
NPT	N	Y	N	Y	Y	N	N
Robarts	Y	N	N	N	Y	Y	N
Scar	N	Y	Y	Y	Y	Y	Y
St.Michael's	Y	N	N	N	Y	Y	N
Trinity	Y	N	N	N	Y	Y	N
Victoria	Y	N	N	N	Y	Y	N

Y=yes, N=no

UTCS Systems

3033/N12 Processor

- located in McLennan Physical Laboratories
- provides General Purpose Job Stream, TSO, WYLBUR, APL
- 12 megabytes of memory
- MVS with JES2

3033/U16 Processor

- located in McLennan Physical Laboratories
- provides instructional access using BICS
- 16 megabytes of memory
- UTS under VM

4341 Mod II Processor

- located in McLennan Physical Laboratories
- provides administrative IMS/VS, DB/DC, Batch and TSO
- 16 megabytes of memory
- MVS with JES2

DECsystem-10 Model 1090

- located in McLennan Physical Laboratories
- provides General Purpose Time-Sharing
- 512 K - 36 bit words of memory
- TOPS-10 operating system, version 7.01A
- GALAXY queuing, spooling, and batch subsystem, Version 2.0

PDP 11/70

- located in McLennan Physical Laboratories
- provides UNIX text processing
- 3.75 MB of memory
- UNIX Seventh Edition

VAX 11/750

- located in McLennan Physical Laboratories
- provides backup, program testing, and inter-communication relating to student services
- provides Spare Cycle Service
- 3 megabytes of memory
- VMS

Computer Disciplines Facility

VAX 11/750 (2 megabytes of memory)
VAX 11/780 (4 megabytes of memory)

- located in Engineering Annex
- provides Computer Science interactive access
- UNIX (Berkeley)

Communications & Technical Support

- located in Sandford Fleming Building, Fourth Floor
- provides consulting and configuration of microcomputer systems
- offers media conversion services
- Communications Group provides communications systems, terminals, modems, data channels: consulting and installation.
- Field Service Group installs and maintains small computer systems on a contract basis or on a cost-per-call basis.
- PDP-11 Lab has DEC PDP-11/40 with GT44 Graphics with various disk and tape formats; numerous special peripherals
- provides online and real-time computing services, data acquisition and conversion, and minicomputer services
- maintains copies of some DECUS public-domain software
- provides consulting on minicomputers; configures and installs minicomputer systems

Microcomputer Facility

- located in McLennan Physical Laboratories
- Machines available include: IBM Personal Computer, APPLE II Plus, TRS-80 Model 1, S-100 CP/M System, Osborne Micro, plus a variety of others on loan from suppPliers

Scarborough College Systems

VAX 11/750 (2 megabytes of memory)

- provides instructional access using LIBRA
- VMS

VAX 11/750 (5 megabytes of memory)

- provides instruction access using UNIX (Berkeley)

Erindale College Systems

VAX 11/780 (4 megabytes of memory)

- provides instructional access using LIBRA and Research access
- VMS

VAX 11/750 (5 megabytes of memory)

- provides instructional access using UNIX (Berkeley)

Consulting and Enquiries

External Marketing Consultants	Dr. Bill Fehlner	MP345	6509
	Ihor Prociuk	MP345	6875
Erindale College	Peter Wall	2043	828-5311
Scarborough College	William Barek	S626	284-3173

General Enquiries	4990	System Status Enquiries (DEC)	4318
Central Advising	HELP	System Status Enquiries (IBM)	7393
Account & Access Code Enquiries (U of T)	8703	300 Baud Interactive Services	6200
Account & Access Code Enquiries (External)	7148	1200 Baud Interactive Services	3959
Tape Library (Academic Services)	7319	DATAPAC	4320 0056
Tape Library (Administrative Services)	6693	Telenet	0302043200056
U of T Computer Library	2987	Tymnet	<backspace> DPAC;302043200056

UTCS Directory

Director	Dr. Warren Jackson	MP350	8948
Associate Director	Eugene Siciunas	MP350	5058
Executive Asst., Research & Planning	Wendy Chin	MP350	5568
Managers			
Accounting & Administration	William Murphy	MP350	4428
Communications & Technical Support	Norman Housley	SF4306	4967
Operations	Dr. Bob Chambers	MP350	7092
Systems	Bill Lauriston	MP331	3579
User Interface	Don Gibson	MP345	7331

Committees on Computing

UTCS Review Board	Chairman	Prof. D. Nowlan	4984
	Secretary	Ms. M. Kloosterman	4170
PACCFS	Chairman	Prof. J. Bossons	8626
UTCS Users' Committee	Chairman	Prof. J. Hurd	3056
	Secretary	Ms. C. Pereira	4463
BICS Steering Committee	Chairman	Prof. R.C. Holt	8726
Computing Disciplines Facility	Chairman	Prof. R. Hehner	6026
LIBRA Steering Committee	Chairman	Prof. G.S. Graham	6321
Natural Language Processing Steering Committee	Chairman	Prof. I. Lancashire	828-5273

UTCS Newsletter Subscription Request Form

If you wish to have your name and/or address added, changed or deleted from our Newsletter mailing list, please complete this form.

Please _____ add

_____ change

_____ delete my name and address.

NAME, ADDRESS and TELEPHONE, in full	PREVIOUS NAME and ADDRESS, in full (or include your old mailing label)
______________________________	______________________________
______________________________	______________________________
______________________________	______________________________
______________________________	______________________________

____ Check here if you can receive *COMPUTERNEWS* by campus mail.

Comments on this issue of *COMPUTERNEWS*

-- **FOLD HERE** --

Return to:

COMPUTERNEWS
University of Toronto Computing Services
Room 207
11 King's College Road
Toronto, Ontario
M5S 1A1

UNIVERSITY OF TORONTO
COMPUTING SERVICES
TORONTO, CANADA
M5S 1A1